

OIB - P-3 Orion - WFF 04/10/19 Science Report

Aircraft: [P-3 Orion - WFF \(See full schedule\)](#)

Date: Wednesday, April 10, 2019

Mission: OIB

Mission Location: Northeast Grid 05 Prime

Mission Summary:

Mission: Northeast Grid 05 Prime

Priority: High

This is a new mission, one of a suite of six flights intended to thoroughly sample the bedrock topography of northeast Greenland along a series of nearly coast-parallel ICESat lines. For 2019, we completely redesigned this flight, although the original purpose remains the same. We change the east-west transit lines to follow the latitudes of low-latency ICESat-2 crossovers, and we fly a low-latency IS-2 ground track in the east, which also covers a "hot-spot" in the bed uncertainty. We fly a second roughly north-south line in the east targeted at multiple such hot-spots. We also add brief flyovers of an interesting subglacial site in the northeast, a Cold War-era waste site in the west, and a small ice dome between Tracy and Heilprin Glaciers.

An unencouraging suite of imagery and models for the Arctic Ocean and northwest Greenland brought us back to northeast Greenland today. Again covering new ground and achieving a variety of objectives. After breaking out of the cloud ceilings at Thule, we headed to the northernmost line first. We again surveyed the curious ice dome along a different azimuth than originally planned and also observed a Greenlandic hunting party. Some wispy fog was encountered west of the central ice divide, but then skies were clear and the survey lines proceeded uneventfully. ATM reports 99% laser altimetry data collection, and MCoRDS in swath imaging mode (beam steering + ping-pong) performed well. Snow radar a minor quasi-coherent noise issue that was traced to MCoRDS and will be remediated post-flight. Headwall continued to have brief freezing issues. With diligent testing and replacement of a faulty RS-232 to USB converter, ATM appears to have resolved a longstanding issue with Applanix IMUs today. Due to conditions at Thule upon our return, we performed five passes before attempting to land and getting waved off, forcing us to divert to Kangerlussuaq, an OIB first. Some of us were better prepared for this eventuality than others. Quoting Jim Yungel (ATM) as he enthusiastically showed us his go-bag: "I prepared for a quarter century for this and it finally happened."

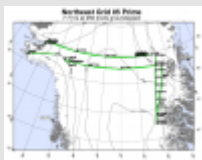
ICESat-2 reference ground track (RGT) / latency (positive/negative = ICESat-2 orbits before/after our flight)
330 / -9 days

Attached images:

1. Map of today's mission (John Sonntag / NASA)
2. Matt Linkswiler and Eugenia De Marco describing OIB instrument operation to Thule AB command personnel prior to today's flight (Jeremy Harbeck / NASA)
3. The terminus of Tracy Glacier (Joe MacGregor / NASA)
4. Greenlandic hunting camp in upper Inglefield Fjord, surrounded by sled dog team (Jeremy Harbeck / NASA)
5. The small circular ice dome between Tracy and Heilprin Glaciers in northwest Greenland (Joe MacGregor / NASA)
6. John Paden monitoring MCoRDS while surveying the subglacial site of interest in northeast Greenland (Jeremy Harbeck / NASA)
7. A panorama of nunataks and mountains in central East Greenland, at the southeastern end of today's survey (Jeremy Harbeck / NASA)

Images:

Map of today's mission



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Matt Linkswiler and Eugenia De Marco describing OIB instrument



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Greenlandic hunting camp in upper Inglefield Fjord, surrounded by sled



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The terminus of Tracy Glacier



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The small circular ice dome between Tracy and Heilprin Glaciers in



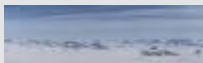
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John Paden monitoring MCoRDS while surveying the subglacial site of



[Read more](#)

A panorama of nunataks and mountains in central East Greenland, at the



[Read more](#)

Submitted by: Joseph MacGregor on 04/12/19

Related Flight Report:

P-3 Orion - WFF 04/10/19

Flight Number: #2081: 2019 OIB Science Flight #6

Payload Configuration: Operation IceBridge

Nav Data Collected: No

Total Flight Time: 10.1 hours

Submitted by: Mike Cropper on 04/16/19

Flight Segments:

From:	BGTL	To:	BGSF
Start:	04/10/19 10:45 Z	Finish:	04/10/19 20:50 Z
Flight Time:	10.1 hours		
Log Number:	19P017	PI:	Joseph MacGregor
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Miles Flown:	2702 miles		

Flight Hour Summary:

	19P017
Flight Hours Approved in SOFRS	250
Total Used	216.3
Total Remaining	33.7

19P017 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining	Miles Flown
03/26/19	#2053: 2019 OIB ATF	Check	0.9	0.9	249.1	0
03/27/19	#2059: 2019 OIB PTF-Laser	Check	2.3	3.2	246.8	0
03/28/19	#2061: 2019 OIB PTF-Radar	Check	3.2	6.4	243.6	0
04/01/19	#2068: 2019 OIB WFF-BGTL Transit Flight	Transit	6.9	13.3	236.7	2458
04/03/19	#2070: 2019 OIB Science Flight #1	Science	7.6	20.9	229.1	1938
04/05/19	#2072: 2019 OIB Science Flight #2	Science	7.7	28.6	221.4	1910
04/06/19	#2073: 2019 OIB Science Flight #3	Science	7.2	35.8	214.2	2000
04/08/19	#2075: 2019 OIB Science Flight #4	Science	6.9	42.7	207.3	1780
04/09/19	#2076: 2019 OIB Science Flight #5	Science	7.8	50.5	199.5	2045
04/10/19	#2081: 2019 OIB Science Flight #6	Science	10.1	60.6	189.4	2702
04/11/19	#2082: BGSF-BGTL Transit	Transit	2.2	62.8	187.2	696
04/12/19	#2083: 2019 OIB Science Flight #7	Science	7.2	70	180	2109
04/15/19	#2086: 2019 OIB Science Flight #8	Science	4.8	74.8	175.2	1243
04/16/19	#2087: 2019 OIB Science Flight #9	Science	7.6	82.4	167.6	2036
04/17/19	#2088: 2019 OIB Science Flight #10	Science	7.7	90.1	159.9	1937
04/18/19	#2090: 2019 OIB Science Flight #11	Science	7.8	97.9	152.1	2008
04/19/19	#2091: 2019 OIB Science Flight #12	Science	7.6	105.5	144.5	2104
04/20/19	#2092: 2019 OIB Science Flight #13	Science	6.9	112.4	137.6	0

04/22/19	#2094: 2019 OIB Science Flight #14	Science	6.6	119	131	1867
04/23/19	#2099: 2019 OIB Science Flight #15	Science	7.7	126.7	123.3	1979
04/25/19	#2102: 2019 OIB BGTL-KBGR Transit Flight	Transit	6.2	132.9	117.1	0
04/26/19	KBGR to BGSF Transit	Transit	5.7	138.6	111.4	0
05/05/19	2019 OIB Science Flight #16	Science	7.8	146.4	103.6	0
05/06/19	2019 OIB Science Flight #17	Science	8.4	154.8	95.2	0
05/07/19	2019 OIB Science Flight #18	Science	8.5	163.3	86.7	0
05/08/19	2019 OIB Science Flight #19	Science	8	171.3	78.7	0
05/12/19	2019 OIB Science Flight #20	Science	9	180.3	69.7	0
05/13/19	2019 OIB Science Flight #21	Science	7	187.3	62.7	0
05/14/19	2019 OIB Science Flight #22	Science	7.9	195.2	54.8	0
05/15/19	2019 OIB Science Flight #23	Science	8.3	203.5	46.5	0
05/16/19	2019 OIB Science Flight #24	Science	6.3	209.8	40.2	0
05/17/19	2019 OIB Transit	Transit	6.2	216	34	0
05/17/19	2019 OIB Transit	Transit	0.3	216.3	33.7	0

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

Page Last Updated: April 22, 2017

Page Editor: Brad Bulger

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